National Institute of Environmental Health Sciences

Temporal trends and climatic factors associated with bacterial enteric diseases in Vietnam, 1991-2001

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Abstract:

OBJECTIVE: In Vietnam, shigellosis/dysentery, typhoid fever, and cholera are important enteric diseases. To better understand their epidemiology, we determined temporal trends, seasonal patterns, and climatic factors associated with high risk periods in eight regions across Vietnam. METHODS: We quantified monthly cases and incidence rates (IR) for each region from national surveillance data (1991-2001). High- and low-disease periods were defined from the highest and lowest IRs (1 SD above and below the mean) and from outbreaks from positive outliers (4 SDs higher in 1 month or 2 SDs higher in > or Euro Surveillance (Bulletin Europeen Sur Les Maladies Transmissibles; European Communicable Disease Bulletin) 2 consecutive months). We used general linear models to compare precipitation, temperature, and humidity between high- and low-risk periods. RESULTS: Shigellosis/dysentery was widespread and increased 2.5 times during the study period, with the highest average IRs found between June and August (2.1/100,000-26.2/100,000). Typhoid fever was endemic in the Mekong River Delta and emerged in the Northwest in the mid-1990s, with peaks between April and August (0.38-8.6). Cholera was mostly epidemic along the central coast between May and November (0.07-2.7), and then decreased dramatically nationwide from 1997 onward. Significant climate differences were found only between high- and low-disease periods. We were able to define 4 shigellosis/dysentery, 14 typhoid fever, and 8 cholera outbreaks, with minimal geotemporal overlap and no significant climatic associations. CONCLUSIONS: In Vietnam, bacterial enteric diseases have distinct temporal trends and seasonal patterns. Climate plays a role in defining high- and low-disease periods, but it does not appear to be an important factor influencing outbreaks.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2199291

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Health Professional

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: Vietnam

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Cholera, Shigellosis

Foodborne/Waterborne Disease (other): Typhoid fever

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified